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PROCEEDINGS OF THE CLUB

THURSDAY, APRIL 27, 1904

This meeting was held in the museum building of the New York Botanical Garden ; Dr. H. H. Rusby presided and twenty persons were present.

Mr. O. P. Medsger, 167 Laurel Avenue, Arlington, N. J., was elected a member of the Club.

A report of the committee on increasing the membership of the Club was asked for, and Dr. Rusby, chairman of the committee, reported that the work was to be taken up more actively after the closing of the school year.

The Club voted to support the application of Miss W. J. Robinson for a grant from the Newberry Fund to aid her in the study of Jamaica ferns.

A communication from the organization committee for the International Botanical Congress to be held in Vienna, June 12 to 18, 1905, concerning the number of delegates the Club would send to the Congress was read by Dr. Barnhart. It was moved and carried that the Secretary be authorized to notify the committee that the Club expects to send three delegates.

The first paper of the scientific program was by Dr. N. L. Britton, on "Explorations in Florida and the Bahamas." This was illustrated by maps and specimens, and described the general features of the flora of the region of the part of subtropical Florida south of Miami, to which a visit of three weeks' duration was made in March and early April with Mrs. Britton and Dr. M. A. Howe, in coöperation with Professor P. H. Rolf's of the U. S. Subtropical Laboratory. A detailed account of the flora was not taken up, inasmuch as Dr. John K. Small, who explored the same region last autumn, and who will again visit it in May, proposes to publish a complete account of the material secured. Two genera, new to the continent, both represented in Florida by a single species were discovered, *Alvaradoa*, in hammock lands, and *Sachsia* in pine lands, both of these genera existing also in Cuba and in the Bahamas.

Dr. C. F. Millspaugh, of the Field Columbian Museum, joined

the party early in April and the Island of New Providence in the Bahamas was partially explored. The distribution of plants of this island was described, the littoral zone containing many common West Indian and Floridian species, of which the most characteristic are perhaps the shrubs *Jacquinia Keyensis*, and *Salmea petroboides*, the latter endemic in the Bahamas.

Between the littoral zone and the interior regions of the island there is in places a plant society, which may be termed an intermediate one, characterized by such shrubs as *Buxus Bahamensis*, *Banara reticulata*, *Calliandra formosa*.

The pine lands (*Pinus Bahamensis*) contain among other species, *Pteridium caudatum*, *Vernonia Bahamensis* and *Byrsonima lucida*, as characteristic species. The palmetto lands (apparently *Inodes Palmetto*) contain more herbaceous vegetation than the other regions, including *Linum Bahamensis*, *Sachsia Bahamensis*, and *Sabbatia campanulata*, though also having a considerable number of shrubs. The "coppets" or "hammocks," as they are called in Florida, are areas devoid of either pines or palmettos and often occupy isolated areas entirely surrounded by pine forests as in southern Florida; characteristic trees of these hammocks are *Dipholis salicifolia*, *Eugenia confusa*, *Icacorea paniculata*, and *Coccolobis laurifolia*, all of which occur in similar situations in Florida.

Dr. C. F. Millspaugh, who was with Dr. Britton and remained somewhat longer, was asked to discuss the paper. He reported that plants found in bloom at the center of the island were found in fruit at the west end, while at the east end, which is dry and rocky, the buds of the same species were scarcely started. South Bemini is much like New Providence in vegetation, though its elevation is less. A *Rhus* resembling *R. toxicodendron* was found on Cat Cay and there is an interesting palm on the same island.

Inquiry was made concerning *Croton Eluteria* which is prized in West Indian countries as a bitter drug but is said to be disappearing. The plant had not been seen but a guide said that it grew on South Bemini.

Professor Underwood called attention to *Odontosoria clavata*, which in Jamaica and Cuba grows in very wet places and is a

soft tender plant, while in the Bahamas what is apparently the same species grows in dry pot-holes and is firmer and stronger.

The second paper was by Dr. D. T. MacDougal on "Desert and Delta Vegetation of Sonora and Baja California." The Colorado river has been called the Nile of America. It flows 600 miles without tributaries and has a delta 150 to 200 miles long by 50 to 100 miles broad. In this region is the most pronounced desert in the United States and probably in America. The topography of the region may be described as a great basin with the Colorado River flowing along the eastern margin. The Salton basin is 400 feet below sea level and in times of unusual flood is transformed into a great lake by overflow of the Colorado river, the last such flood occurring in 1891 when part of the track of the Southern Pacific Railroad was under water. At one point in this basin there has been an elevation of mud volcanoes from 10 to 50 feet high, where there are hot sulphur springs. The dry season is from August to April or May. At the end of the wet season the Indians dig holes deep enough to get into and plant their corn and melons in these. The surface of the ground becomes very dry but enough moisture is retained to mature the crops. Within a few yards of the river-channels relative humidities of 11, 12 or 13 per cent. were observed. The temperature of the summer flood water is 45° to 55° while the air temperatures are the highest to be found in the country, 100° to 125° . At the lower end of the delta is a region of brackish water.

Distichlis spicata is widely distributed on the mud flats; the Mexican poplar, an unidentified willow, and the mesquite were the trees observed, while the arrow-weed forms almost impenetrable thickets. Within the width of a few yards one passes from river vegetation to true desert.

Ammobroma Sonorae, described by Torrey, has a stem 2 to 4 feet long, all buried except the head. It is parasitic on *Atriplex* roots. A puff ball with the same form and similar appearance was found, but it was too brittle to stand carrying.

The east coast of Baja California, near the head of the Gulf, is supposed to be the driest spot in America. One half inch of rain

only has been recorded at Yuma during 1903, and Palmer visited an island in the gulf in 1889 which had had no rain for a year and a half. Landings were made at three points, the farthest at San Felipe Bay, 55 miles below the river. Mr. Brandegee visited San Luis Bay once, but the San Felipe region was entirely unexplored by botanists. Here the coast rises by gradual slope to 500 feet and then by precipitous rocks to peaks, one of which is over 10,000 feet high. The seasons are evidently irregular and not clearly marked. Many of the plants have milky or resinous juice and many are aromatic. *Cereus Schottii* was found forming dense groves near San Felipe. Living plants of what is probably *Cereus Pecten-aboriginum* were brought home. The Indian-comb cactus has a short trunk and long branches in contrast to the usual form of *C. giganteus*.

Although the plants are very sparse it is not to be supposed that they have a harder struggle for existence than others, as is shown by trying to grow them under artificial conditions. *Fouquieria splendens* seems to reach its optimum development in the delta lands. Cactuses with sheathing spines were noted and some of these shed their spines. The flora is not Arizonian. In San Felipe there are no plants with storage organs for there is no surplus of water to store.

In the discussion it was mentioned that the poison cacti are all unarmed.

Professor Underwood remarked on a specimen of the southern brake sent from Burlington, Vermont. This form, described in recent years as *Pteris aquilina* var. *pseudocaudata* by Clute, is the *Pteris latiuscula* Desv., described in 1827.

WILLIAM T. HORNE,
Secretary pro tem.

REVIEWS

Bailey's Plant Breeding.*

Professor Bailey is a teacher in a rare sense and American botany owes much to his abundant, skilful and simple exposition

* Bailey, L. H. Plant Breeding. 12mo. Pp. 13 + 334. New York, The Macmillan Co. 1904. [Ed. 3.]